RESEARCH ARTICLE

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Do recovery-oriented messages improve self-efficacy and positive emotions amongst people with lived experience of psychosis? Experimental investigation

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Abstract

Objectives: Recovery-oriented perspectives have become accepted worldwide as an alternative to the biomedical approach to conceptualizing and managing severe mental health problems. It has been proposed that one advantage of this is to support self-efficacy amongst people with a lived experience of psychosis, especially when recovery messages are presented by lived experience peers.

The aim of the present study was to investigate the proposed psychological benefits of the recovery paradigm, by testing for possible differential impacts of recovery versus biomedical messages on self-efficacy beliefs and positive emotional state amongst people with experience of psychosis. It was hypothesized that (1) recovery-oriented messages, when presented by lived experience peers, would generate improvements in self-efficacy and positive emotions relative to biomedical messages presented by a professional and (2) recovery-oriented messages delivered by a professional would generate improvements in self-efficacy and positive emotions relative to biomedical messages delivered by a professional. We also explored whether recovery-oriented messages were more impactful when delivered by a lived experience peer versus a professional.

Design: Experimental design with three within-subject video-based conditions.

Methods: Fifty-three participants with lived experience of psychosis viewed three videos: (i) people with lived experience sharing their experiences of recovery; (ii) mental health professionals presenting traditional biomedical conceptualizations of psychosis; and (iii) mental health professionals presenting recovery perspectives. Participants provided baseline clinical and demographic information, and post-viewing ratings of experienced changes in self-efficacy and emotional state.

Results: Hypothesis 1 was supported: both self-efficacy and positive emotions were significantly increased by a video of peers sharing personal recovery stories relative to professionals presenting biomedical messages. Hypothesis 2 was partially supported: when comparing videos of recovery versus biomedical messages delivered by professionals, significant relative benefits were found for positive emotions, but not self-efficacy.

Conclusions: This experimental investigation generated a pattern of findings broadly supportive of the assumed psychological benefits of the recovery paradigm for people with lived experiences of psychosis. Findings must be interpreted with caution given the limitations of the present design, but encourage further experimental research to directly test the interpersonal impacts of the recovery paradigm.

Practitioner Points

- Discussing psychosis with clients within a personal recovery framework as opposed to a traditional biomedical framework appears associated with more positive emotional responses.
- Hearing peers with shared lived experience discuss recovery may also additionally lead to increased self-efficacy amongst people with psychosis.

INTRODUCTION

For people with severe and persisting mental health problems, an orientation towards promoting personal recovery as opposed to symptom remission is increasingly emphasized in service delivery

(Braslow, 2013). A commonly cited definition of personal recovery is living a personally satisfying, hopeful, and contributing life, regardless of whether a person experiences ongoing symptoms or engages with services (Anthony, 1993; Mead & Copeland, 2000). In addition to self-determination as a central tenet of personal recovery, an influential meta-synthesis of service user accounts of their own recovery highlighted five enabling psychosocial processes (summarized by the CHIME acronym): developing and maintaining supportive relationships (connectedness); feeling motivated and believing in one's ability to enact change (hope); developing positive personal and social identities beyond a stigmatized 'passive patient' role (identity); living a subjectively meaningful and purposeful life (meaning); and accessing agency and autonomy in recovering one's life (empowerment) (Leamy et al., 2011).

This perspective emerged from the service user and survivor advocacy movement, in large part as a reaction to the biomedical and illness/disease models that have historically underpinned mental health service delivery (Deacon, 2013; Slade & Longden, 2015), and in which recovery conceptions are largely confined to symptom remission/cessation (Andreasen, 1985; Bellack, 2006; Galletly et al., 2016; Lehman, 1988). Service users and mental health advocates have argued that this perspective can contribute to pessimistic and stigmatized views of persisting mental illness, and can disempower service users by positioning them as passive recipients of care (Hughes, Hayward, et al., 2009; Mancini et al., 2005; Read et al., 2006). Indeed, some studies find that negative stereotype endorsement, or internalized stigma, can increase when mental health problems are linked with biogenetic causal explanations (Carter et al., 2018; Read et al., 2006).

However, there remains a lack of empirical research on the impact of recovery-based perspectives on mental health service users when contrasted with traditionally dominant biomedical frameworks. The limited and inconclusive empirical literature on recovery-based services has primarily focused on the impact of complex interventions on broad measures of recovery (Lloyd-Evans et al., 2014; Meadows et al., 2019; Slade et al., 2015). In this context, a potentially important direction is a focused examination of specific processes associated with the ways in which mental health is discussed by people service users are likely to encounter during their service contact.

In the present study we chose to focus on self-efficacy, a view of oneself as capable and agentic (Bandura, 1977), and positive emotion: two variables that have strong negative associations with internalized stigma (Gumley et al., 2010; Rüsch et al., 2009; Watson et al., 2007). Both are also robust predictors of recovery (Gumley, 2010; Morrison et al., 2013; Watson et al., 2007). Although these associations are now widely accepted, much of the underpinning research is correlational and qualitative, leaving open questions about whether assumed benefits for service users can be demonstrated using experimental methods.

Beyond mental health professionals, peers (persons with lived experience of recovery) are increasingly involved in the delivery of mental health care, with their inclusion seen as aligned with recovery-oriented practice (Davidson et al., 2012). Indeed, extensive qualitative investigation of mental health service users has highlighted the value of peers in transforming illness-dominated identities, engendering hope and belonging, and modelling self-management of one's own recovery (Cook et al., 2010; Davidson et al., 2008; Hughes et al., 2009; Mead & Copeland, 2000). Limited research also identifies emotional state and self-efficacy as possible mechanisms through which peers may influence recovery (Hughes, Wood, et al., 2009; Mancini, 2007; Tew et al., 2011).

The present study brought two significant innovations to research into the proposed benefits of the recovery paradigm for people with lived experience of psychosis. First, we narrowed the focus by investigating the immediate impact of recovery versus biomedical messaging on psychological variables. As noted above, such messaging is presumed to be particularly effective when delivered by lived experience peers. Second, we moved beyond correlational and qualitative methods to create an experimental analogue of the experience of receiving ontological messages about serious mental illness. Specifically, we conceptualized the immediate individual impacts of recovery and biomedical paradigms as occurring through social interaction where professionals or peers discuss the meaning of mental health or the

definition of mental disorder. Video recorded material was used to investigate the subjective impact of personal recovery versus biomedical messages on self-efficacy beliefs and emotional state of people with experience of psychosis. Two hypotheses were set: (1) personal recovery-oriented messages when presented by lived experience peers would generate immediate improvements in self-efficacy and positive emotions relative to biomedical messages presented by a professional and (2) recovery-oriented messages delivered by a professional would also generate immediate improvements in self-efficacy and positive emotions relative to biomedical messages delivered by a professional. The impacts of recovery messages delivered by peers versus professionals were also explored.

METHOD

Design

A within-subjects design was used to present three types of video stimuli: (i) peers sharing personal recovery stories, (ii) mental health professionals presenting recovery content, and (iii) mental health professionals presenting biomedical/serious mental illness content. The order of presentation was counterbalanced across participants (using the six possible permutations). The impact of the different types of messages on self-efficacy and emotional state was assessed by self-report.

Participants

Inclusion criteria were (a) age 18–65; (b) diagnosis of non-organic psychotic disorder (schizophrenia-related disorder or bipolar disorder or major depressive disorder with psychotic features present within the past 2 years); and (c) sufficient conversational English for meaningful participation. Participants were recruited from clinical and community mental health services via referral from practitioners, print and online advertisements, and publicity services – the latter efforts were designed to also attract eligible people who might not be engaged with services. The study was promoted as an investigation of the usefulness of different mental-health-related video resources and targeted anyone with lived experience of psychosis and/or anyone who worked with or otherwise knew anyone with lived experience of psychosis who might be interested. Further promotional steps were determined in consultation with services, and included meeting with client-facing workers to discuss the study, providing workers with scripts for discussions with potential participants, and attending client drop-in sessions to promote the study to potential participants in person. Workers were also encouraged to refer people who may not have received or endorsed a psychosis-related diagnosis if they had been engaged with services for two or more years. Fifty-three participants (age $M = 44.85$, $SD = 10.17$) were deemed eligible and consented to take part. All participants reported both prior receipts of a formal diagnosis and engagement with specialist mental health services. Years since first contact with mental health services was variable ($M = 20.13$, $SD = 10.18$; range = 1–47 years). The majority of participants identified as men (52.8%), single (67.9%), and reported experiencing involuntary treatment (64.2%), low prior contact with recovered peers (64.2%), and trauma (90.6%). Additional demographic information is shown in Table 1.

Procedure

Following institutional ethics approval and informed consent, participants were told that participating in the study would involve: (i) answering questions about their own mental health and service experiences and (ii) watching three 5-min videos of people talking about serious mental health difficulties and recovery and answering questions about their viewing experiences. No further information about

TABLE 1 Demographic characteristics of participants

Demographic variable	(N = 53)
Mean age (SD)	44.85 (10.17)
Gender – n (%)	
Male	28 (52.8)
Female	25 (47.2)
Marital status – n (%)	
Single	36 (67.9)
In a relationship	8 (15.1)
Married	4 (7.5)
Divorced/separated	4 (7.6)
Widowed	1 (1.9)
Highest educational qualification – n (%)	
Did not finish secondary/high school	18 (34.0)
Completed secondary/high school	7 (13.2)
Diploma (including associate diploma)	11 (20.8)
Bachelor's degree (including Honours)	6 (11.3)
Postgraduate diploma/Graduate certificate	2 (3.8)
Other	9 (17.0)
Employment status – n (%)	
Student	5 (9.5)
Paid/self-employment	7 (13.2)
Voluntary employment	2 (3.8)
Unemployed	5 (9.4)
Home duties	4 (7.5)
Pension	30 (56.6)
Housing status – n (%)	
Living with family/partner	20 (37.7)
Living alone	20 (37.7)
Living in supported/residential/group housing	6 (11.3)
Living with roommates	6 (11.3)
Homeless	1 (1.9)
Diagnosis from SCID/MINI – n (%)	
Schizophrenia	26 (49.1)
Schizoaffective disorder	12 (22.6)
Depression with psychotic symptoms	4 (7.5)
Bipolar disorder with psychotic symptoms	9 (17)
Psychotic disorder not otherwise specified	2 (3.8)
Agreement with diagnosis – n (%)	
Strongly disagree	6 (11.3)
Somewhat disagree	4 (7.5)
Neutral	11 (20.8)
Somewhat agree	16 (30.2)
Strongly agree	16 (30.2)

Abbreviations: MINI, Mini International Neuropsychiatric Interview; SCID, Structured Clinical Interview for DSM-IV-TR Axis I Disorders.

presenters or video content was provided prior to completing the study. After confirming study suitability and informed consent, participants completed the study within Qualtrics (Provo, UT) on a 13-inch laptop computer, with each video embedded for viewing in full-screen mode. All participants initially completed demographic questions as well as baseline measures of self-efficacy and recovery. Participants were then assigned to view the videos in random order via a concealed, computer-generated allocation sequence within Qualtrics (Figure 1). After viewing each video, participants completed measures of pre- to post-video emotion state change ratings, self-efficacy, and perceived presenter qualities. At the conclusion of the experiment, participants were able to watch a video of members of the research team explaining the specific aims of the study and the three video conditions. They were also provided with a written debriefing statement. Completion time ranged from 40 to 60 min and participants were remunerated for their time and travel.

Video conditions

Four men and two women presenters appeared in each of the three videos. The same presenters were used for the two professional video conditions and they were matched by age and gender with the peer presenters. Video duration (5 min) and production design was matched across videos. Prior to data collection, the videos were reviewed by peer and professional workers to ensure the content accurately reflected each perspective.

Peers: Recovery

The peer recovery video was compiled from video material previously developed as part of the Self Management and Recovery Technology (SMART) research program in the State of Victoria, Australia (Arnold et al., 2019, 2020; Farhall et al., 2022; Thomas, Farhall, Foley, Leitan et al., 2016; Thomas, Farhall, Foley, Rossell et al., 2016; Williams et al., 2018, 2021). The video was edited to focus on key concepts relating to recovery. This included each of the concepts within the CHIME recovery framework; understanding mental health in terms of psychosocial factors such as trauma and adversity; and contact with recovered peers, self-advocacy, and choice in decision-making as potential facilitators of the recovery process. The possibilities for living well with mental health difficulties were a central theme. Speakers discussed recovery with reference to their own lived experiences.
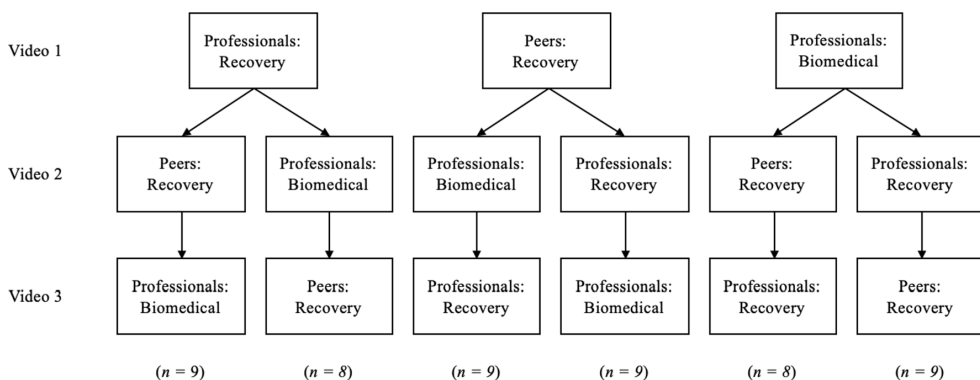

FIGURE 1 Order groups

Professionals: Biomedical

Filmed for the purpose of this study, the next video presented interviews with mental health professionals (researchers and practitioners) presenting information on severe mental illness based on the biomedical and illness/disease models. Key themes included presenting mental illness as an illness like any other, the biogenetic aetiology of psychosis, practitioners having the expertise to help, assessment and diagnosis, early intervention and prevention, clinical treatment pathways and targets (e.g., medication, hospitalization, and family support to target symptom reduction and reduced admissions), the common course of serious mental illness, recovery as symptom remission, and recent advancements in biomedical research in psychosis.

Professionals: Recovery

Also developed for the current study, the final video involved the same mental health professionals discussing personal recovery. The content was elicited and edited to capture themes closely similar to the peer recovery videos. Although talking from a professional expertise perspective, speakers acknowledged that the basis for understanding recovery concepts was shared with those with lived experience (e.g., 'Through our work and from talking to people…', 'When we talk to people about recovery, they often talk about…').

Measures

The diagnosis was confirmed by a trained research interviewer using the Structured Clinical Interview for DSM-IV-TR Axis I Disorders (SCID) (First et al., 2002) or the Mini-International Neuropsychiatric Interview (M.I.N.I.) (Hergueta et al., 1998). Participants completed baseline and post-video measures including a number of demographic questions (i.e., gender, age, relationship/employment/housing status, and psychiatric service use history), and self-report scales.

Self-efficacy was measured on a modified, two-item version of the Self-Efficacy for Personal Recovery Scale (Villagonzalo et al., 2018): 'How confident are you that in the future you will be able to live a satisfying life alongside any mental health problems you may have?' and 'How confident are you that you can do things to manage any future mental health difficulties?' Both items are rated on a visual analogue scale from 0 (*not confident I can do this at all*) to 100 (*highly confident I can do this*), which were averaged for the present purposes. The mean inter-item correlation for the two elements of SEPRS score at baseline was acceptable ($\alpha = .71$).

The impact of videos on the emotional state was measured immediately post-viewing on a purpose-built self-report scale measuring change on six items tapping emotions relevant to people living with psychosis (Lysaker et al., 2012; Rüsch et al., 2014; Schrank et al., 2012). Participants indicated on six visual analogue scales the extent to which they felt less (-50), through no change (0), to more ($+50$) of a particular state ('hopeful', 'motivated', 'ashamed', 'alone', 'validated/understood', and 'positive about myself as a person') after viewing each video. Two reverse-scored items ('ashamed' and 'alone') items were recoded before averaging across all six items to generate a score where higher values reflected a more positive emotional state. Internal consistency of the new 6-item scale across the three video conditions was adequate ($\alpha = .83$ to $.93$). To verify that there were no systematic differences in perceived presenter qualities (e.g., 'How knowledgeable were the presenters in the video you just viewed?') these were assessed as distinct items on a sliding scale from 0 (e.g., *not at all knowledgeable*) to 100 (e.g., *very knowledgeable*). Other assessed presenter qualities were 'believable', 'authentic', 'likeable', 'expert', and 'interesting'.

Data analytic strategy

Raw data were screened to check for missing values and assumption violations, with transformations being made when necessary. Hypotheses were tested using mixed ANOVAs, with analyses conducted

separately for the two dependent variables of self-efficacy and emotional state. The within-subjects factor CONDITION had three levels 'Peers: Recovery', 'Professionals: Recovery', and 'Professionals: Biomedical'. The between-subjects factor, ORDER, quantified the potential confound of order effects (with six ORDER groups, see Figure 1). The two hypotheses were then tested using three pairwise comparisons for each dependent variable, with $p < .025$.

RESULTS

Preliminary analyses

Two participants withdrew from the study, and one generated outlying values that were inspected and deemed invalid, leaving a total of $n = 50$ for analysis. An inverse square root transformation was applied to the distribution of self-efficacy scores to address marked right-skew, with the distribution of the transformed variable approaching normality. No significant differences in perceived presenter qualities were noted according to video condition. Table 2 presents descriptive statistics.

Self-efficacy

The main effect of CONDITION on self-efficacy score was significant: Greenhouse–Geisser $F(1.74, 76.34) = 6.42$, $p = .004$, $\eta_p^2 = 0.127$ (sphericity not assumed). Neither ORDER nor the interaction between CONDITION and ORDER was significant: Greenhouse–Geisser $F(8.68, 76.34) = 1.14$, $p = .344$, $\eta_p^2 = 0.115$ (sphericity not assumed). Pairwise comparisons (with Bonferroni correction) showed that the 'Peers: Recovery' condition was associated with higher ratings compared to the 'Professionals: Biomedical' condition ($p = .007$, see Figure 2). Differences between 'Professionals: Recovery' and 'Professionals: Biomedical' were not statistically significant ($p = .080$) and neither were mean differences between the two recovery videos ($p = .306$).

Positive emotional state

The main effect of CONDITION on change in positive emotions was significant: $F(2,88) = 11.91$, $p < .001$, $\eta_p^2 = .213$. Neither ORDER nor the interaction between CONDITION and ORDER were significant: $F(10,88) = 1.87$, $p = .06$, $\eta_p^2 = .176$. Pairwise comparisons with Bonferroni correction showed that the 'Professionals: Recovery' and the 'Peers: Recovery' video conditions elicited greater positive emotion change ratings compared to the 'Professionals: Biomedical' video condition ($p = .001$ and $p < .001$, respectively, see Figure 3). The emotional states elicited from the 'Professional: Recovery' and the 'Peers: Recovery' video conditions did not differ from each other ($p = 1.00$).

DISCUSSION

To the best of our knowledge, this is the first study to investigate via experimental methods in a lab-based setting a core deduction from the recovery perspective, viz., that people with lived experience of mental disorder may benefit from interpersonal exposure to recovery-oriented as opposed to biomedical characterizations of their mental health. As predicted (Hypothesis 1), both self-efficacy and positive emotions were significantly increased by a video of peers sharing personal recovery stories relative to professionals presenting biomedical messages. There was partial support for Hypothesis 2 which interrogated the effect of professionals changing their message: when comparing videos of recovery versus biomedical messages delivered by professionals, significant relative benefits were found for positive

TABLE 2 Descriptive statistics

|	Order groups M(SD)						Total
	1	2	3	4	5	6	
Baseline n	9	9	7	9	8	9	51
Self-efficacy	68.06 (23.66)	80.83 (15.00)	52.79 (20.09)	66.83 (20.32)	66.81 (25.59)	75.72 (14.82)	69.18 (20.89)
Recovery	53.89 (6.95)	59.78 (6.96)	50.57 (9.18)	56.44 (7.78)	58.50 (8.70)	55.11 (9.41)	55.86 (8.29)
Following video viewing n	8	9	7	9	8	9	50
Self-efficacy							
Professionals: recovery	64.00 (27.64)	67.11 (25.03)	65.71 (27.50)	66.06 (24.72)	63.00 (31.32)	70.28 (23.18)	66.14 (25.24)
Peers: eecovery	67.44 (29.27)	75.06 (8.95)	60.00 (21.99)	65.66 (26.39)	75.31 (26.80)	76.33 (23.65)	70.31 (23.65)
Professionals: biomedical	64.25 (24.78)	64.61 (23.08)	54.79 (25.70)	58.00 (27.07)	56.25 (32.87)	72.11 (27.06)	62.00 (27.06)
Positive emotional state							
Professionals: recovery	25.50 (16.97)	19.48 (14.79)	18.33 (13.38)	15.00 (20.85)	17.33 (16.76)	14.35 (13.16)	18.71 (15.63)
Peers: recovery	24.56 (14.84)	15.24 (13.59)	12.55 (12.69)	22.04 (18.60)	21.29 (11.98)	14.65 (19.54)	18.46 (15.65)
Professionals: biomedical	12.00 (16.40)	14.85 (15.78)	15.90 (11.00)	2.57 (14.58)	10.13. (19.18)	8.44 (16.48)	10.56 (15.81)
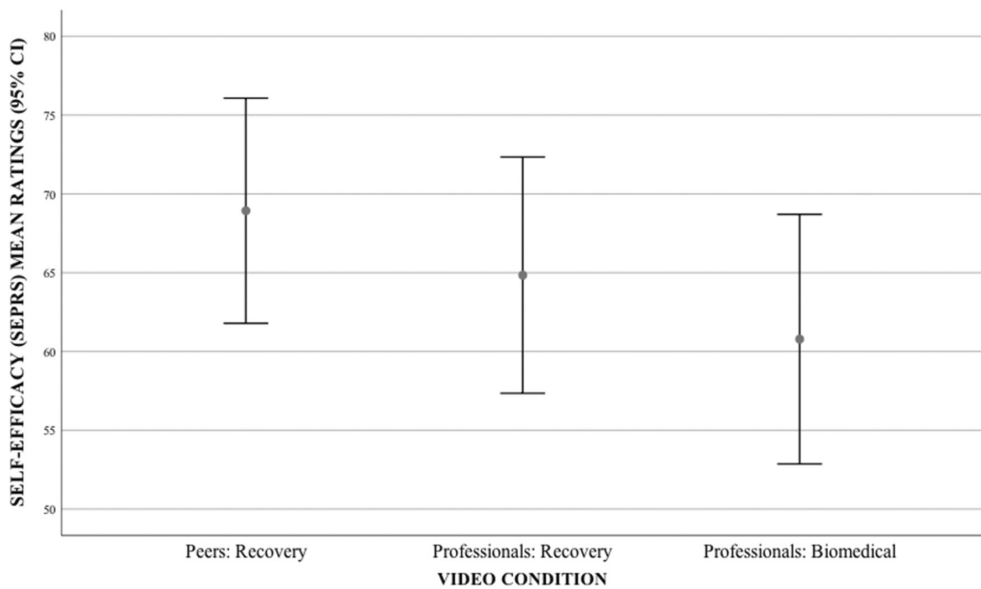
FIGURE 2 Self-efficacy by condition

emotions, but not self-efficacy. The novel experimental design proved feasible and helps map out a direction for future sceptical research into recovery as a paradigm and interpersonal approach.

On balance, findings from this study are consistent with previous research that has explored the individual impacts of recovery service orientations and technologies using other methods, though any interpretations must necessarily be considered tentative and contingent in nature given the absence of a peer-delivered biomedical video condition in the present study. When compared with subjective reports after viewing professionals offer biomedical interpretations of their experiences, participants here reported parallel improvements in emotionality and self-efficacy immediately after watching lived experience presenters reflect on their own experiences navigating recovery. These findings align with previous trials (Mahlke et al., 2017; Van Gestel-Timmermans et al., 2012), correlational (McLeod et al., 2019), and qualitative (Mancini, 2007; Mancini et al., 2005) studies exploring similar questions.

Contrary to expectations, however, the dependent variables did not move in parallel when professionals delivered different messages: unlike the subjective improvements in *emotional state* that were reported after viewing professionals offer recovery as opposed to biomedical messages, participants' *self-efficacy evaluations* after viewing the two professionally-delivered videos did not differ. This finding diverges from current evidence presented across two recent systematic reviews: that people with experience of psychosis prefer psychosocial explanations of mental difficulties (Carter et al., 2017), and that individuals harbour greater confidence about their abilities to pursue recovery goals when engaging with service providers aligned with these perspectives (Thomas et al., 2018). One explanation may be that all of the experimental and observational studies included in these systematic reviews were conducted in clinical or other naturalistic settings and may therefore have more ecological validity than the current lab-based study. One alternative explanation for reconciling prior research with the present experimental data, that maintains fidelity to social learning (Bandura, 1977) and social comparison (Gerber et al., 2018) theories, could be that peers have a uniquely therapeutic role in developing a competent and efficacious self-concept in the context of serious mental illness. Positive emotionality may tap into the optimism of the messages and likeability for health professionals, similar to the mood-related outcomes that have been prioritized in previous related research (e.g., treatment engagement and satisfaction, internalized stigma) (Carter et al., 2018). It might be hypothesized that only those with lived experience are able to engender hope for oneself as an agent of recovery because perceptions of their 'similar-enoughness' protect against threatening and disempowering dynamics (see also State of Victoria, 2020, pp. 367–447).
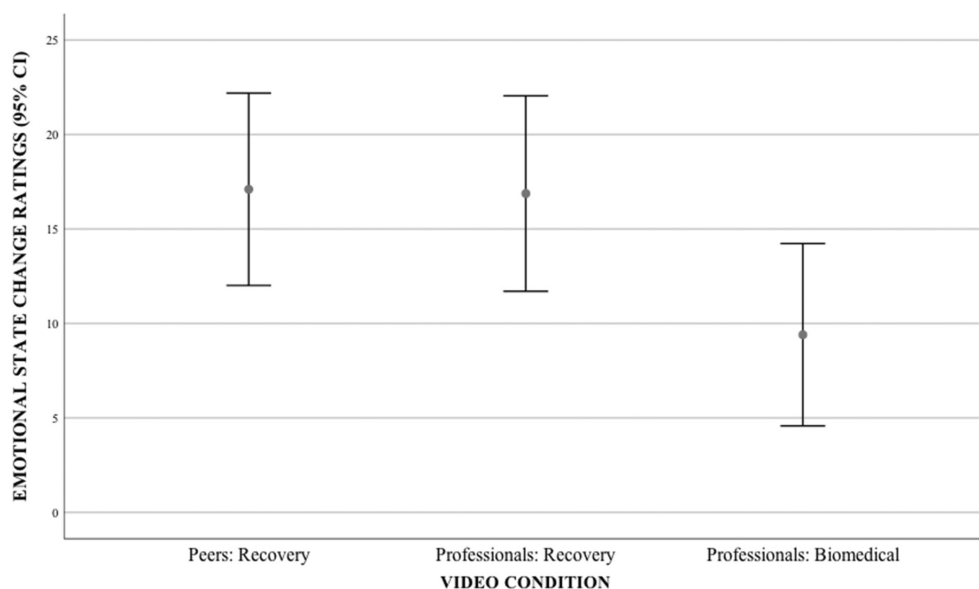
FIGURE 3 Means and 95% confidence intervals of emotion state change ratings according to video condition

This prediction warrants exploration in future experimental research in clinical and other naturalistic settings.

The present study shows that using experimental analogues to concretize principles of practice at the level of interpersonal exchanges is feasible, and encourages the use of such methods to more closely attend to lower-level psychological processes that have thus far been overlooked in trials that evaluate peer-delivered recovery-oriented services (Chinman et al., 2014; Fuhr et al., 2014; Lloyd-Evans et al., 2014; Pitt et al., 2013; Repper & Carter, 2011). Although the findings here are provisional, they suggest that direct access to patient perspectives in mental health services may uniquely contribute to important recovery processes in the immediate term. The current study extends the extant literature through our preliminary attempt to isolate the paradigmatic components of perspective and messenger through our development and test of an experimental analogue of interpersonal encounters with peers and professionals, and by moving beyond global measures of recovery that are unable to contrast at the level of psychological process. Continued attention to these questions is important, not least because concerns about disempowering dynamics in mental health services prevail, as does the assumption that recovery-oriented encounters with professionals and clinicians are inherently beneficial for service users in self-managing and sustaining recovery beyond contact with services (Rennick-Egglestone et al., 2019).

The study had a number of limitations. First, the possibilities of a biased sample are apparent. Adoption of biomedically-anchored terminology in advertisement and inclusion criteria (e.g., 'lived experience of psychosis') may have excluded otherwise eligible individuals who use different terms to describe their relevant lived experience and/or reject such characterizations. This decision, alongside the administration of confirmatory diagnostic tools, may have also influenced participant responses via inadvertent positioning of the research team as proponents of biomedically derived models of meaning-making. Also relevant to the possibilities of a biased sample, years since first contact with mental health services exceeded 10 years for the vast majority of the present sample and symptom severity data were not captured. Previous research has emphasized the role of time in personal recovery meaning and the potential influence of symptom status on this meaning (O'Keeffe et al., 2022). Ongoing research, motivated by our findings here, could also explore the nuances of these impacts amongst individuals experiencing different phases of wellness (e.g., individuals deemed clinically high risk) and durations of illness (e.g., individuals experiencing their first episode of psychosis compared with the years beyond).

Second, the ecological validity of our stimuli is unknown: video watching may not capture the complex (potentially paradigm-blurring) relationship-based sharing of information and perspectives that really occurs in mental health settings. Third, the measurement of the two dependent variables was suboptimal. Future research should utilize validated measures of target constructs, and pre- post-change should be calculated on these dependent variables (in contrast to the retrospective change reports used here). Fourth, while analyses here demonstrated that video order did not confound the findings, there are clear advantages for the current research questions of a between-subjects design. Fifth, a stronger design would account for the effect of the presenter by adding a fourth condition (lived experience peers presenting biomedical messages) to consider potential interaction between presenter and message, as well as the possible transience of effects by following up beyond immediately after viewing each video. In the present study, data analytic concerns were weighed against participants' ability to sustain attention, as well as broader research participation pathways. Finally, the present study focused on only a small subset of the psychological benefits purported to arise from a recovery versus a biomedical framing of the challenges of psychosis. A future program of research in this space could more systematically test the CHIME components, and test whether a recovery-oriented interaction generates a change in not only beliefs and emotions (as suggested here), but also recovery behaviours, and the nature of any changes across time.

CONCLUSIONS

Within its limitations, the present study suggests that people with lived experience of psychosis benefit from recovery-oriented messages (in terms of self-efficacy and positive emotions), at least when these messages are delivered by peers. The novel experimental methods used here proved feasible and illuminating, demonstrating that core assumptions underpinning the recovery-oriented sea-change in mental health are amenable to rigorous empirical tests. A program of research in this space has the potential to drive evidence-based refinements in recovery-oriented practice.

AUTHOR CONTRIBUTIONS
Bronte McLeod: Conceptualization; data curation; formal analysis; investigation; methodology; project administration; writing – original draft. **Catherine Meyer:** Investigation; methodology; writing – review and editing. **Denny Meyer:** Formal analysis; writing – review and editing. **Cassy Nunan:** Validation; writing – review and editing. **Greg Murray:** Supervision; writing – review and editing. **John Farhall:** Supervision; writing – review and editing. **Neil Thomas:** Conceptualization; funding acquisition; methodology; supervision; writing – review and editing.

CONFLICT OF INTEREST
All authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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